INDEX TO AUTHORS

A

Abu-Haydar, George. See *Al-Khalidi, Abu-Haydar, Chernigoy, and Kerr,* 487

Acher, Roger. See *Light, Acher, and du Vigneaud,* 633

Albert, S. See *Levin, Johnson, and Albert,* 15

Alexander, Victoria. See *Binkely, Alexander, Bell, and Lea,* 559

Al-Khalidi, Usama, Abu-Haydar, George, Chernigoy, Franz, and **Kerr, Stanley E.** A titrimetric method for the determination of molecular weight of small polynucleotides, 487

Ames, Bruce N. The biosynthesis of histidine: D-*erythro*-imidazoleglycerol phosphate dehydrase, 131

Antoniades, H. N., Pennell, R. B., McArthur, J. W., Ingersoll, F. M., Ulfelder, H., and **Oncley, J. L.** Preparation and concentration of the pituitary gonadotropins from human plasma, 863

Atkinson, David I. See *Tennent, Zanetti, Atkinson, Kuron, and Opdyke,* 241

B

Bacon, J. A. See *Patrick and Bacon,* 569

Baer, Erich, Maurukas, Jonas, and **Clarke, Donald D.** Synthesis of phosphatidyl peptides. I. *O*-(Distearoyl-L-α-glycerylphosphoryl)-L-serylglycylglycine, 181

Barner, Hazel D. See *Cohen, Lichtenstein, Barner, and Green,* 611

—. See *Green, Barner, and Cohen,* 621

Bauman, J. W. See *Hill, Bauman, and Chaikoff,* 905

Behrman, E. J., and **Stanier, R. Y.** Observations on the oxidation of halogenated nicotinic acids, 947

— and —. The bacterial oxidation of nicotinic acid, 923

Beiser, Sam M. See *Erlanger, Borek, Beiser, and Lieberman,* 713

Bell, Fred E. See *Binkley, Alexander, Bell, and Lea,* 559

Binkley, Francis, Alexander, Victoria, Bell, Fred E., and **Lea, Charlotte.** Peptidases and alkaline phosphatases of swine kidney, 559

—. See *Seal and Binkley,* 193

Black, Simon. See *Downey and Black,* 171

Borek, Felix. See *Erlanger, Borek, Beiser, and Lieberman,* 713

Brown, David H. See *Glaser and Brown,* 729

Brown, R. R. See *de Castro, Brown, and Price,* 777

Buchanan, M. See *Flaks, Erwin, and Buchanan,* 201

—. See *Flaks, Warren, and Buchanan,* 215

C

de Castro, F. T., Brown, R. R., and **Price, J. M.** The intermediary metabolism of tryptophan by cat and rat tissue preparations, 777

Chaikoff, I. L. See *Hernandez and Chaikoff,* 447

—. See *Hill, Bauman, and Chaikoff,* 905

Charalampous, Frixos C., and **Lyras, Chryssoula.** Biochemical studies on inositol. IV. Conversion of inositol to glucuronic acid by rat kidney extracts, 1

Chernigoy, Franz. See *Al-Khalidi, Abu-Haydar, Chernigoy, and Kerr,* 487

—. See *Kerr and Chernigoy,* 495

Christman, A. A. See *Cornish and Christman,* 315

Cifonelli, J. A., and **Dorfman, Albert.** The biosynthesis of hyaluronic acid by group A streptococcus. V. The uridine nucleotides of group A streptococcus, 547

XUM

Clarke, Donald D. See *Baer, Maurukas, and Clarke,* 181
Cohen, Elaine. See *Wilcox, Cohen, and Tan,* 999
Cohen, Seymour S., Lichtenstein, Janet, Barner, Hazel D., and **Green, Maurice.** Studies on the biosynthesis of bacterial and viral pyrimidines. IV. Utilization of pyrimidine bases and nucleosides by bacterial mutants, 611
—. See *Green, Barner, and Cohen,* 621
—. See *Green and Cohen,* 601
Conney, A. H., Miller, E. C., and **Miller, J. A.** Substrate-induced synthesis and other properties of benzprene hydroxylase in rat liver, 753
Cooper, William D., and **Loring, Hubert S.** The ribonucleic acid composition and phosphorus distribution of chloroplasts from normal and diseased Turkish tobacco plants, 813
Cornatzer, W. E. See *Miroff, Cornatzer, and Fischer,* 255
Cornish, Herbert H., and **Christman, A. A.** A study of the metabolism of theobromine, theophylline, and caffeine in man, 315
Cunningham, Leon W., Nuenke, B., Joanne, and **Strayhorn, W. David.** Sulfhydryl contents and tryptic susceptibility of thermally denatured ovalbumin, 835

D

Davenport, Charlene H. See *Pentz, Davenport, Glover, and Smith,* 433
Decker, R. H. See *Suhadolnik, Stevens, Decker, Henderson, and Hankes,* 973
De Luca, Hector F., Gran, Fredrik C., Steenbock, Harry, and **Reiser, Sheldon.** Vitamin D and citrate oxidation by kidney mitochondria, 469
Dittmer, John C. See *Hanahan, Dittmer, and Warashina,* 685
Dorfman, Albert. See *Cifonelli and Dorfman,* 547
Downey, Phyllis F., and **Black, Simon.** A new naturally occurring isomer of β-methyllanthionine, 171
Drew, Ruth M. See *Popenoe and Drew,* 673
Dreyfus, Jean-Claude. See *Kruh, Dreyfus, Schapira, and Padieu,* 113

E

Eagle, Harry, Piez, K. A., and **Fleischman, Ralph.** The utilization of phenylalanine and tyrosine for protein synthesis by human cells in tissue culture, 847
Edelhoch, H., Rodwell, Victor W., and **Grisolia, Santiago.** The molecular properties of yeast and muscle phosphoglyceric acid mutase, 891
Elliott, Patricia. See *Stadtman and Elliott,* 983
Erlanger, Bernard F., Borek, Felix, Beiser, Sam M., and **Lieberman, Seymour.** Steroid-protein conjugates. I. Preparation and characterization of conjugates of bovine serum albumin with testosterone and with cortisone, 713
Erwin, Mary Jane. See *Flaks, Erwin, and Buchanan,* 201
Evans, R. L., and **Saroff, H. A.** A physiologically active guinidinated derivative of insulin, 295
van Eys, Jan, and **Kaplan, Nathan O.** The addition of sulfhydryl compounds to diphosphopyridine nucleotide and its analogues, 305

F

Feist, E. See *Feller and Feist,* 275
Feller, D. D., and **Feist, E.** Metabolism of adipose tissue. II. Incorporation of propionate carbon into lipides by slices of adipose tissue, 275
Fischer, Robert G. See *Miroff, Cornatzer, and Fischer,* 255
Flaks, Joel G., Erwin, Mary Jane, and **Buchanan, John M.** Biosynthesis of the purines. XVI. The synthesis of adenosine 5′-phosphate and 5-amino-4-imidazolecarboxamide ribotide by a nucleotide pyrophosphorylase, 201

—, **Warren, Leonard,** and **Buchanan, John M.** Biosynthesis of the purines. XVII. Further studies of the inosinic acid transformylase system, 215
Fleischman, Ralph. See *Eagle, Piez, and Fleischman,* 847
Freedland, R. A., and **Harper, A. E.** Metabolic adaptations in higher animals. I. Dietary effects on liver glucose-6-phosphatase, 743
Fridovich, Irwin, and **Handler, Philip.** Xanthine oxidase. I. The oxidation of sulfite, 67
Futterman, Sidney. Enzymatic reduction of folic acid and dihydrofolic acid to tetrahydrofolic acid, 1031

G

Gamble, James L., Jr. Potassium binding and oxidative phosphorylation in mitochondria and mitochondrial fragments, 955
Glaser, Luis, and **Brown, David H.** The synthesis of chitin in cell-free extracts of *Neurospora crassa,* 729
Glover, W. See *Pentz, Davenport, Glover, and Smith,* 433
Gots, Joseph S. Purine metabolism in bacteria. V. Feed-back inhibition, 57
Gran, Fredrik C. See *De Luca, Gran, Steenbock, and Reiser,* 469
Green, Maurice, Barner, Hazel D., and **Cohen, Seymour S.** Studies on the biosynthesis of bacterial and viral pyrimidines. V. Hydrogenation of 5-hydroxymethylpyrimidines, 621
— and **Cohen, Seymour S.** Studies on the biosynthesis of bacterial and viral pyrimidines. III. Derivatives of dihydrocytosine, 601
—. See *Cohen, Lichtenstein, Barner, and Green,* 611
Grisolia, Santiago. See *Edelhoch, Rodwell, and Grisolia,* 891
—. See *Rodwell, Towne, and Grisolia,* 875
Grossowicz, Nathan, and **Halpern, Yeheskel S.** Enzymatic transfer and hydrolysis involving glutamine and asparagine, 643
Gryder, Rosa M. See *Pogell and Gryder,* 701

H

Hakim, Anwar A. Ribonuclease specificity: combined action of the major components of crystalline ribonuclease, 459
Halpern, Yeheskel S. See *Grossowicz and Halpern,* 643
Hamilton, H. B. See *Morrison, Hamilton, and Stotz,* 767
Hanahan, Donald J., Dittmer, John C., and **Warashina, Emily.** A column chromatographic separation of classes of phospholipides, 685
Handler, Philip. See *Fridovich and Handler,* 67
Hankes, L. V. See *Suhadolnik, Stevens, Decker, Henderson, and Hankes,* 973
Harper, A. E. See *Freedland and Harper,* 743
Hassid, W. Z. See *Solms and Hassid,* 357
Hegsted, D. M. See *Vitale, Nakamura, and Hegsted,* 573
Heinz, Erich, and **Mariani, H. A.** Concentration work and energy dissipation in active transport of glycine into carcinoma cells, 97
Henderson, Kirsten. See *Kozloff, Lute, and Henderson,* 511
Henderson, L. M. See *Suhadolnik, Stevens, Decker, Henderson, and Hankes,* 973
Henis, Dov B. See *Hofmann, Henis, and Panos,* 349
Hernandez, H. H., and **Chaikoff, I. L.** Purification and properties of pancreatic cholesterol esterase, 447
Herr, Earl B., Jr. See *Koshland and Herr,* 1021
Hill, R., Bauman, J. W., and **Chaikoff, I. L.** Carbohydrate metabolism of the liver of the hypophysectomized rat, 905
Hill, Robert L., and **Smith, Emil L.** Leucine aminopeptidase. VII. Action on long chain polypeptides and proteins, 577

XUM

Hofmann, Klaus, Henis, Dov B., and **Panos, Charles.** Fatty acid interconversion in *Lactobacilli*, 349

I

Ingersoll, F. M. See *Antoniades, Pennell, McArthur, Ingersoll, Ulfelder, and Oncley*, 863

J

Johnson, Ralph M. See *Levin, Johnson, and Albert*, 15

K

Kaplan, Nathan O. See *van Eys and Kaplan*, 305

Kee, Florence L. See *Popenoe and Drew*, 673

Kennedy, Eugene P. See *Smith, Weiss, and Kennedy*, 915

— and **Koshland, Daniel E., Jr.** Properties of the phosphorylated active site of phosphoglucomutase, 419

Kerr, Stanley E., and **Chernigoy, Franz.** Note on the preparation of prostatic phosphomonoesterase free from ribonuclease, 495

—. See *Al-Khalidi, Abu-Haydar, Chernigoy, and Kerr*, 487

Kinoshita, Jin H. The stimulation of the phosphogluconate oxidation pathway by pyruvate in bovine corneal epithelium, 247

Koerner, J. F., and **Sinsheimer, R. L.** A deoxyribonuclease from calf spleen. I. Purification and properties, 1039

— and —. II. Mode of action, 1049

Koshland, D. E., Jr., and **Herr, Earl B., Jr.** The role of water in enzymatic hydrolysis: general method and its application to myosin, 1021

—. See *Kennedy and Koshland*, 419

Kozloff, Lloyd M., and **Lute, Murl.** Viral invasion. II. The role of zinc in bacteriophage invasion, 529

— and —. III. The release of viral nucleic acid from its protein covering, 537

—, —, and **Henderson, Kirsten.** Viral invasion. I. Rupture of thiol ester bonds in the bacteriophage tail, 511

Kruh, Jacques, Dreyfus, Jean-Claude, Schapira, Georges, and **Padieu, Prudent.** Non-uniform incorporation of glycine-2-C^{14} into rabbit hemoglobin *in vivo* and *in vitro*, 113

Kuron, Gunther W. See *Tennent, Zanetti, Atkinson, Kuron, and Opdyke*, 241

L

Laskowski, M. See *Laurila and Laskowski*, 49

Laurila, Ulla-Riitta, and **Laskowski, M.** Studies of specificity of deoxyribonuclease II from thymus, 49

Lea, Charlotte. See *Binkley, Alexander, Bell, and Lea*, 559

Levin, Elinor, Johnson, Ralph M., and **Albert, S.** Mitochondrial changes associated with essential fatty acid deficiency in rats, 15

Levy, H. Richard, and **Vennesland, Birgit.** The stereospecificity of enzymatic hydrogen transfer from diphosphopyridine nucleotide, 85

Lichtenstein, Janet. See *Cohen, Lichtenstein, Barner, and Green*, 611

Lieberman, Seymour. See *Erlanger, Borek, Beiser, and Lieberman*, 713

Light, Albert, Acher, Roger, and **du Vigneaud, Vincent.** Ion exchange chromatography of purified posterior pituitary preparations, 633

Litwack, Gerald. Interaction of thyroid hormone and liver tyrosine oxidation, 823

Loring, Hubert S. See *Cooper and Loring*, 813

Lute, Murl. See *Kozloff and Lute*, 529, 537

—. See *Kozloff, Lute, and Henderson*, 511

Lyras, Chryssoula. See *Charalampous and Lyras*, 1

M

Malmström, Bo G. See *Westhead and Malmström*, 655

Mariani, H. A. See *Heinz and Mariani*, 97

Markovitz, Alvin, and **Steinberg, Daniel.** A method for the determination of peptides in the presence of free amino acids, 285

Marshall, C. W., Ralls, Jack W., Saunders, Francis J., and **Riegel, Byron.** 11-Oxygenated ethynyl-, vinyl-, and ethyltestosterones, 339

Massey, Vincent, and **Singer, Thomas P.** Studies on succinic dehydrogenase. III. The fumaric reductase activity of succinic dehydrogenase, 263

Maurukas, Jonas. See *Baer, Maurukas, and Clarke,* 181

McArthur, J. W. See *Antoniades, Pennell, McArthur, Ingersoll, Ulfelder, and Oncley,* 863

McIntosh, E. Nelson, Purko, M., and **Wood, W. A.** Ketopantoate formation by a hydroxymethylation enzyme from *Escherichia coli,* 499

Miller, Alexander, and **Waelsch, Heinrich.** Formimino transfer from formamidinoglutaric acid to tetrahydrofolic acid, 397

— and —. The conversion of urocanic acid to formamidinoglutaric acid, 365

— and —. The formation of N^{10}-formylfolic acid from formamidinoglutaric acid and folic acid, 383

Miller, E. C. See *Conney, Miller, and Miller,* 753

Miller, J. A. See *Conney, Miller, and Miller,* 753

Miroff, George, Cornatzer, W. E., and **Fischer, Robert G.** The effect of poliomyelitis virus type I (Mahoney strain) on the phosphorus metabolism of the HeLa cell, 255

Mirsky, I. Arthur, and **Perisutti, Gladys.** The relative specificity of the insulinase activity of rat liver extracts, 77

Morrison, Martin, Hamilton, H. B., and **Stotz, Elmer.** The isolation and purification of lactoperoxidase by ion exchange chromatography, 767

— and **Stotz, Elmer.** The extraction and paper chromatography of hemins, 123

Murayama, Makio. Titratable sulfhydryl groups of normal and sickle cell hemoglobins at 0° and 38°, 231

N

Nakamura, M. See *Vitale, Nakamura, and Hegsted,* 573

Nuenke, B. Joanne. See *Cunningham, Nuenke, and Strayhorn,* 835

O

Oncley, J. L. See *Antoniades, Pennell, McArthur, Ingersoll, Ulfelder, and Oncley,* 863

Opdyke, David F. See *Tennent, Zanetti, Atkinson, Kuron, and Opdyke,* 241

P

Padieu, Prudent. See *Kruh, Dreyfus, Schapira, and Padieu,* 113

Panos, Charles. See *Hofmann, Henis, and Panos,* 349

Patrick, H., and **Bacon, J. A.** The effect of vitamin D upon bone mineralization of Ca^{45} and Sr^{89} as chlorides and as phosphopeptides, 569

Pennell, R. B. See *Antoniades, Pennell, McArthur, Ingersoll, Ulfelder, and Oncley,* 863

Pentz, E. Irene, Davenport, Charlene H., Glover, W., and **Smith, Darrel D.** A test for the determination of taurine in urine, 433

Perisutti, Gladys. See *Mirsky and Perisutti,* 77

Piez, K. A. See *Eagle, Piez, and Fleischman,* 847

Pogell, Burton M., and **Gryder, Rosa M.** Enzymatic synthesis of glucosamine 6-phosphate in rat liver, 701

Popenoe, Edwin A., and **Drew, Ruth M.** The action of an enzyme of *Clostridium perfringens* on orosomucoid, 673

Price, J. M. See *de Castro, Brown, and Price,* 777

Purko, M. See *McIntosh, Purko, and Wood,* 499

XUM

R

Ralls, Jack W. See *Marshall, Ralls, Saunders, and Riegel,* 339

Reiner, Buena, and **Zamenhof, Stephen.** Studies on the chemically reactive groups of deoxyribonucleic acids, 475

Reiser, Sheldon. See *De Luca, Gran, Steenbock, and Reiser,* 469

Remy, Charles N., and **Smith, Marilyn S.** Metabolism of 2,6-diaminopurine: conversion to 5′-phosphoribosyl-2-methylamino-6-aminopurine by enzymes of *Escherichia coli,* 325

Riegel, Byron. See *Marshall, Ralls, Saunders, and Riegel,* 339

Rodwell, Victor W., Towne, Jack C., and **Grisolia, Santiago.** The kinetic properties of yeast and muscle phosphoglyceric acid mutase, 875

—. See *Edelhoch, Rodwell, and Grisolia,* 891

S

Sachs, Howard. A stabilized enzyme system for amino acid incorporation, 23

Salomon, L. L. Ascorbic acid catabolism in guinea pigs, 163

Saroff, H. A. See *Evans and Saroff,* 295

Saunders, Francis J. See *Marshall, Ralls, Saunders, and Riegel,* 339

Schapira, Georges. See *Kruh, Dreyfus, Schapira, and Padieu,* 113

Seal, Ulysses S., and **Binkley, Francis.** An inorganic pyrophosphatase of swine brain, 193

Seaman, Gerald R. Preparation and properties of the succinate-cleaving enzyme, 149

Siegel, Jack M. The dark anaerobic metabolism of acetone and acetate by the photosynthetic bacterium *Rhodopseudomonas gelatinosa,* 41

Singer, Thomas P. See *Massey and Singer,* 263

Smith, Darrel D. See *Pentz, Davenport, Glover, and Smith,* 433

Smith, Emil L. See *Hill and Smith,* 577

Smith, Marilyn S. See *Remy and Smith,* 325

Smith, Sylvia Wagner, Weiss, Samuel B., and **Kennedy, Eugene P.** The enzymatic dephosphorylation of phosphatidic acids, 915

Solms, J., and **Hassid, W. Z.** Isolation of uridine diphosphate *N*-acetylglucosamine and uridine diphosphate glucuronic acid from mung bean seedlings, 357

Stadtman, Thressa C., and **Elliott, Patricia.** Studies on the enzymic reduction of amino acids. II. Purification and properties of a D-proline reductase and a proline racemase from *Clostridium sticklandii,* 983

Stanbury, John B. The requirement of monoiodotyrosine deiodinase for triphosphopyridine nucleotide, 801

Stanier, R. Y. See *Behrman and Stanier,* 923, 947

Steenbock, Harry. See *De Luca, Gran, Steenbock, and Reiser,* 469

Steinberg, Daniel. See *Markovitz and Steinberg,* 285

Stevens, C. O. See *Suhadolnik, Stevens, Decker, Henderson, and Hankes,* 973

Stotz, Elmer. See *Morrison, Hamilton, and Stotz,* 767

—. See *Morrison and Stotz,* 123

Strayhorn, W. David. See *Cunningham, Nuenke, and Strayhorn,* 835

Strittmatter, Philipp, and **Velick, Sidney F.** The purification and properties of microsomal cytochrome reductase, 785

Suhadolnik, R. J., Stevens, C. O., Decker, R. H., Henderson, L. M., and **Hankes, L. V.** Species variation in the metabolism of 3-hydroxyanthranilate to pyridinecarboxylic acids, 973

T

Tan, Wen. See *Wilcox, Cohen, and Tan,* 999

Tennent, David M., Zanetti, Mary E., Atkinson, David I., Kuron, Gunther W., and **Opdyke, David F.** The endogenous origin of blood cholesterol, 241

Towne, Jack C. See *Rodwell, Towne, and Grisolia,* 875

U

Ulfelder, H. See *Antoniades, Pennell, McArthur, Ingersoll, Ulfelder, and Oncley,* 863

V

Van Pilsum, John F. Creatine and creatine phosphate in normal and protein-depleted rats, 145

Velick, Sidney F. See *Strittmatter and Velick,* 785

Vennesland, Birgit. See *Levy and Vennesland,* 85

du Vigneaud, Vincent. See *Light, Acher, and du Vigneaud,* 633

Vitale, J. J., Nakamura, M., and **Hegsted, D. M.** The effect of magnesium deficiency on oxidative phosphorylation, 573

W

Waelsch, Heinrich. See *Miller and Waelsch,* 365, 383, 397

Warashina, Emily. See *Hanahan, Dittmer, and Warashina,* 685

Warren, Leonard. See *Flaks, Warren, and Buchanan,* 215

Weiss, Samuel B. See *Smith, Weiss, and Kennedy,* 915

Westhead, E. W., and **Malmström, Bo G.** The chemical kinetics of the enolase reaction with special reference to the use of mixed solvents, 655

Wilcox, Philip E., Cohen, Elaine, and **Tan, Wen.** Amino acid composition of α-chymotrypsinogen, including estimation of asparagine and glutamine, 999

Wood, W. A. See *McIntosh, Parks, and Wood,* 499

Z

Zamenhof, Stephen. See *Reiner and Zamenhof,* 475

Zanetti, Mary E. See *Tennent, Zanetti, Atkinson, Kuron, and Opdyke,* 241

XUM

INDEX TO SUBJECTS

A

Acetate: Metabolism, anaerobic, by *Rhodopseudomonas gelatinosa, Siegel,* 41

Acetone: Metabolism, anaerobic, by *Rhodopseudomonas gelatinosa, Siegel,* 41

Acetylglucosamine: *N*-, uridine diphosphate, isolation, from seedlings, mung bean, *Solms and Hassid,* 357

Adenosine 5′-phosphate: Synthesis, by nucleotide pyrophosphorylase, *Flaks, Erwin, and Buchanan,* 201

Adipose tissue: Propionate carbon, lipides, incorporation, *Feller and Feist,* 275

Albumin: Serum, with testosterone and cortisone, conjugates, steroid-protein, characterization of, *Erlanger, Borek, Beiser, and Lieberman,* 713

Amino acid (s): α-Chymotrypsinogen, composition, *Wilcox, Cohen, and Tan,* 999

Incorporation, enzyme system, *Sachs,* 23

Peptides, determination, in presence of, *Markovitz and Steinberg,* 285

Reduction, enzymic, *Stadtman and Elliott,* 983

Amino-4-imidazolecarboxamide ribotide: Synthesis, by nucleotide pyrophosphorylase, 201

Animal(s): Higher, adaptations, metabolic, *Freedland and Harper,* 743

Anthranilate: 3-Hydroxy-. *See* Hydroxyanthranilate

Ascorbic acid: Catabolism, *Salomon,* 163

Asparagine: α-Chymotrypsinogen, amino acid composition in, *Wilcox, Cohen, and Tan,* 999

Enzymatic transfer and hydrolysis, relation, *Grossowicz and Halpern,* 643

B

Bacteria: Metabolism, purine, *Gots,* 57

Nicotinic acid, oxidation, *Behrman and Stanier,* 923

Purine metabolism, feed-back inhibition, *Gots,* 57

Pyrimidine, dihydrocytosine, derivatives, *Green and Cohen,* 601

Bacteriophage: Invasion, zinc, role, *Kozloff and Lute,* 529

Rupture, thiol ester bonds, viral invasion, *Kozloff, Lute, and Henderson,* 511

Bean: Mung, seedlings, uridine diphosphate, isolation, *Solms and Hassid,* 357

Benzpyrene hydroxylase: Liver, synthesis, substrate-induced, *Conney, Miller, and Miller,* 753

Bone: Mineralization, 45-labeled calcium and 89-labeled strontium, as chlorides and phosphopeptides, vitamin D, effect, *Patrick and Bacon,* 569

Brain: Pyrophosphatase, inorganic, *Seal and Binkley,* 193

C

Caffeine: Metabolism, in man, *Cornish and Christman,* 315

Calcium: 45-labeled, bone, vitamin D, effect, *Patrick and Bacon,* 569

Carbohydrate: Metabolism, liver, hypophysectomized, *Hill, Bauman, and Chaikoff,* 905

Carboxylic acid(s): Pyridine-. *See* Pyridinecarboxylic acid

Carcinoma: Glycine, transport, *Heinz and Mariani,* 97

Catabolism: Ascorbic acid, *Salomon,* 163

Chitin: Extracts, cell-free, *Neurospora crassa,* synthesis, *Glaser and Brown,* 729

Chloride(s): 89-labeled and calcium 45-labeled, vitamin D, effect, *Patrick and Bacon,* 569

XUM

Chloroplast(s): Tobacco plants, Turkish, diseased, ribonucleic acid and phosphorus, distribution, *Cooper and Loring*, 813
Cholesterol: Blood, origin, endogenous, *Tennent, Zanetti, Atkinson, Kuron, and Opdyke*, 241
Cholesterol esterase: Pancreatic, purification and properties, *Hernandez and Chaikoff*, 447
Chromatography: Column separation, phospholipides, *Hanahan, Dittmer, and Warashina*, 685
Ion exchange, lactoperoxidase, isolation and purification, *Morrison, Hamilton, and Stotz*, 767
— —, pituitary preparations, purified posterior, *Light, Acher, and du Vigneaud*, 633
Paper, hemin, and extraction, *Morrison and Stotz*, 123
Chymotrypsinogen: α-, amino acid composition of, *Wilcox, Cohen, and Tan*, 999
Citrate: Oxidation, by mitochondria, kidney, *De Luca, Gran, Steenbock, and Reiser*, 469
Clostridium perfringens: Enzyme, orosomucoid, action upon, *Popenoe and Drew*, 673
Clostridium sticklandii: Reductase, proline and racemase from, *Stadtman and Elliott*, 983
Cortisone: Serum albumin conjugates with, characterization, *Erlanger, Borek, Beiser, and Lieberman*, 713
Creatine: Normal and protein-depleted animals, *Van Pilsum*, 145
Creatine phosphate: Normal and protein-depleted animals, *Van Pilsum*, 145
Cytochrome: Reductase, microsomal, purification and properties of, *Strittmatter and Velick*, 785
Cytosine: Dihydro-. *See* Dihydrocytosine

D

Dehydrase: Imidazoleglycerol phosphate. *See* Imidazoleglycerol phosphate dehydrase
Dehydrogenase: Succinic. *See* Succinic dehydrogenase
Deiodinase: Monoiodotyrosine, nucleotide, triphosphopyridine, requirement, *Stanbury*, 801
Deoxyribonuclease: Spleen, mode of action, *Koerner and Sinsheimer*, 1049
—, purification and properties, *Koerner and Sinsheimer*, 1039
Deoxyribonuclease II: Specificity, from thymus, *Laurila and Laskowski*, 49
Deoxyribonucleic acid(s): Chemically reactive groups, *Reiner and Zamenhof*, 475
Dephosphorylation: Enzymatic, phosphatidic acids, *Smith, Weiss, and Kennedy*, 915
Diaminopurine: 2,6-, 5′-phosphoribosyl-2-methylamino-6-aminopurine, conversion by *Escherichia coli, Remy and Smith*, 325
Diet: Glucose-6-phosphatase, liver, effects, *Freedland and Harper*, 743
Dihydrocytosine: Derivatives, pyrimidine, *Green and Cohen*, 601
Dihydrofolic acid: Reduction, enzymatic, to tetrahydrofolic acid, *Futterman*, 1031
Diphosphopyridine nucleotide: Enzymatic hydrogen transfer, stereospecificity, *Levy and Vennesland*, 85
Sulfhydryl compounds, addition, *van Eys and Kaplan*, 305
(Distearoyl-L-α-glycerylphosphoryl)-L-serylglycylglycine: *O*-, peptides, phosphatidyl, *Baer, Maurukas, and Clarke*, 181

E

Enolase: Reaction, chemical kinetics, mixed solvents, relation, *Westhead and Malmström*, 655
Enzyme: Dephosphorylation, phosphatidic acids, *Smith, Weiss, and Kennedy*, 915
Succinate-cleaving, preparation and properties, *Seaman*, 149
System, stabilized, amino acid incorporation, *Sachs*, 23

Enzyme—*continued:*
Transfer and hydrolysis, glutamine and asparagine, relation, *Grossowicz and Halpern*, 643
Enzyme: *See also* Dehydrase, Dehydrogenase, etc.
Epithelium: Corneal, pyruvate, phosphogluconate oxidation pathway, effect, *Kinoshita*, 247
Escherichia coli: Conversion, use of, *Remy and Smith*, 325
Hydroxymethylation, ketopantoate formation, *McIntosh, Purko, and Wood*, 499
Esterase: Phosphomono-. *See* Phosphomonoesterase
Ethyltestosterone: 11-Oxygenated, *Marshall, Ralls, Saunders, and Riegel*, 339

F

Fatty acid: Deficiency, mitochondrial changes, effect, *Levin, Johnson, and Albert*, 15
Interconversions, *Lactobacilli, Hofmann, Henis, and Panos*, 349
Folic acid: Dihydro-. *See* Dihydrofolic acid
N^{10}-Formyl-. *See* Formylfolic acid
N^{10}-Formylfolic acid, formation from, *Miller and Waelsch*, 383
Reduction, enzymatic, to tetrahydrofolic acid, *Futterman*, 1031
Tetrahydro-. *See* Tetrahydrofolic acid
Formamidinoglutaric acid: N^{10}-Formylfolic acid, formation from, *Miller and Waelsch*, 383
Tetrahydrofolic acid, formimino transfer, *Miller and Waelsch*, 397
Urocanic acid, conversion, *Miller and Waelsch*, 365
Formimino acid: Formamidinoglutaric acid, tetrahydrofolic acid, transfer, *Miller and Waelsch*, 397
Formylfolic acid: N^{10}-, formamidinofolic acid, formation, *Miller and Waelsch*, 383
—, formamidinoglutaric and folic acids, formation from, *Miller and Waelsch*, 383
Fumaric reductase: Activity, succinic dehydrogenase, *Massey and Singer*, 263

G

Gluconate: Phospho-. *See* Phosphogluconate
Glucosamine: *N*-Acetyl-. *See* Acetylglucosamine
Glucosamine 6-phosphate: Liver, synthesis, enzymatic, *Pogell and Gryder*, 701
Glucose-6-phosphatase: Liver, dietary effects, *Freedland and Harper*, 743
Glucuronic acid: Inositol, conversion, by kidney extracts, *Charalampous and Lyras*, 1
Uridine diphosphate, isolation, from seedlings, mung bean, *Solms and Hassid*, 357
Glutamine: α-Chymotrypsinogen, amino acid composition in, *Wilcox, Cohen, and Tan*, 999
Enzymatic transfer and hydrolysis, relation, *Grossowicz and Halpern*, 643
Glutaric acid: Formamidino-. *See* Formamidinoglutaric acid
Glyceric acid: Phospho-. *See* Phosphoglyceric acid
Glycine: Carcinoma, transport, concentration and energy dissipation, *Heinz and Mariani*, 97
Glycine-2-C^{14}: Hemoglobin, incorporation, non-uniform, *in vivo* and *in vitro*, *Kruh, Dreyfus, Schapira, and Padieu*, 113
Gonadotropin(s): Pituitary, human plasma, concentration, *Antoniades, Pennell, McArthur, Ingersoll, Ulfelder, and Oncley*, 863
Guanidinated derivative: Insulin, physiologically active, *Evans and Saroff*, 295

H

Hemin(s): Extraction and chromatography, paper, *Morrison and Stotz*, 123

XUM

Hemoglobin(s): Glycine-2-C^{14}, incorporation, non-uniform, *in vivo* and *in vitro*, *Kruh, Dreyfus, Schapira, and Padieu*, 113
Normal and sickle cell, at 0° and 38°, *Murayama*, 231
Histidine: D-*erythro*-Imidazoleglycerol phosphate dehydrase, *Ames*, 131
Hormone: Thyroid, oxidation, tyrosine, liver, interaction, *Litwack*, 823
Hyaluronic acid: Group A *Streptococcus*, uridine nucleotides, biosynthesis, *Cifonelli and Dorfman*, 547
Hydrogen: Enzymatic, transfer, from diphosphopyridine nucleotide, *Levy and Vennesland*, 85
Hydrogen transfer: Enzymatic, diphosphopyridine nucleotide, stereospecificity, *Levy and Vennesland*, 85
Hydrolysis: Enzymatic, water, role in, *Koshland and Herr*, 1021
Hydroxyanthranilate: 3-Pyridinecarboxylic acids, and, metabolism, *Suhadolnik, Stevens, Decker, Henderson, and Hankes*, 973
Hydroxymethylation: *Escherichia coli*, ketopantoate formation, *McIntosh, Purko, and Wood*, 499
Hydroxymethylpyrimidine(s): 5-, hydrogenation, *Green, Barner, and Cohen*, 621

I

Imidazoleglycerol phosphate dehydrase: D-*erythro*-, histidine, *Ames*, 131
Inosinic acid: Transformylase system, *Flaks, Warren, and Buchanan*, 215
Inositol: Glucuronic acid, conversion, by kidney extracts, *Charalampous and Lyras*, 1
Insulin: Derivative, guanidinated, *Evans and Saroff*, 295
Insulinase: Activity, liver extracts, *Mirsky and Perisutti*, 77

K

Ketopantoate: Formation, from *Escherichia coli*, enzyme from, 499
Kidney: Inositol conversion to glucuronic acid, effect, *Charalampous and Lyras*, 1
Kidney—*continued:*
Peptidases and phosphatases, *Binkley, Alexander, Bell, and Lea*, 559
Kinetics: Chemical, enolase reaction, mixed solvents, relation, *Westhead and Malmström*, 655

L

Lactobacilli: Fatty acid, interconversions, *Hofmann, Henis, and Panos*, 349
Lactoperoxidase: Chromatography, ion exchange, isolation and purification, *Morrison, Hamilton, and Stotz*, 767
Lanthionine: Methyl-. *See* Methyllanthionine
Leucine aminopeptidase: Polypeptides, long chain, and proteins, actions on, *Hill and Smith*, 577
Lipide(s): Phospho-. *See* Phospholipide
Liver: Benzypyrene hydroxylase, synthesis, substrate-induced, *Conney, Miller, and Miller*, 753
Glucosamine 6-phosphate, synthesis, enzymatic, *Pogell and Gryder*, 701
Glucose-6-phosphatase, dietary effects on, *Freedland and Harper*, 743
Hypophysectomized, metabolism, carbohydrate, *Hill, Bauman, and Chaikoff*, 905
Insulinase activity, specificity, relative, *Mirsky and Perisutti*, 77
Oxidation, tyrosine, hormone, thyroid, interaction, *Litwack*, 823

M

Magnesium: Deficiency, phosphorylation, oxidative, effect, *Vitale, Nakamura, and Hegsted*, 573
Metabolism: Anaerobic, acetone and acetate, by *Rhodopseudomonas gelatinosa, Siegel*, 41
Carbohydrate, liver, hypophysectomized, *Hill, Bauman, and Chaikoff*, 905
2,6-Diaminopurine,5′-phosphoribosyl-2 methylamino-6-aminopurine, conversion, by *Escherichia coli, Remy and Smith*, 325
3-Hydroxyanthranilate and pyridine-

Metabolism—*continued:*
carboxylic acids, *Suhadolnik, Stevens, Decker, Henderson, and Hankes,* 973
Intermediary, tryptophan, in tissue, *de Castro, Brown, and Price,* 777
Phosphorus, HeLa cell, poliomyelitis virus type I, effect, *Miroff, Cornatzer, and Fischer,* 255
Purine, bacteria, feed-back inhibition, *Gots,* 57
Theobromine, theophylline, caffeine, in man, *Cornish and Christman,* 315
Methyllanthionine: β-, isomer, naturally occurring, *Downey and Black,* 171
Mitochondrion: Changes, fatty acid deficiency, relation, *Levin, Johnson, and Albert,* 15
Potassium binding and phosphorylation, oxidative use, *Gamble,* 955
Monoiodotyrosine: Deiodinase, triphosphopyridine nucleotide, requirement, *Stanbury,* 801
Mung bean: *See* Bean
Muscle: Mutase, phosphoglyceric acid, kinetic properties, *Rodwell, Towne, and Grisolia,* 875
—, — —, molecular properties, *Edelhoch, Rodwell, and Grisolia,* 891
Mutase: Phosphoglyceric acid, yeast, and muscle, kinetic properties, *Rodwell, Towne, and Grisolia,* 875
— —, —, and muscle, molecular properties, *Edelhoch, Rodwell, and Grisolia,* 891
Myosin: Hydrolysis, enzymatic, application to, *Koshland and Herr,* 1021

N

Neurospora crassa: Cell-free extracts, chitin, synthesis, *Glaser and Brown,* 729
Nicotinic acid(s): Halogenated, oxidation, *Behrman and Stanier,* 947
Oxidation, bacterial, *Behrman and Stanier,* 923
Nuclease: Deoxyribo-. *See* Deoxyribonuclease
Nuclease II: Deoxyribo-. *See* Deoxyribonuclease II
Nucleic acid(s): Deoxyribo-. *See* Deoxyribonucleic acid
Ribo-. *See* Ribonucleic acid
Viral, release, from protein, *Kozloff and Lute,* 537
Nucleoside(s): Pyrimidine bases, and, bacterial mutants, utilization, *Cohen, Lichtenstein, Barner, and Green,* 611
Nucleotide: Diphosphopyridine. *See* Diphosphopyridine nucleotide
Poly-. *See* Polynucleotide
Triphosphopyridine. *See* Triphosphopyridine nucleotide
Uridine. *See* Uridine nucleotide

O

Orosomucoid: Enzyme, *Clostridium perfringens,* action upon, *Popenoe and Drew,* 673
Ovalbumin: Denatured, thermally, sulfhydryl content, and susceptibility, tryptic, relation, *Cunningham, Nuenke, and Strayhorn,* 835
Oxidase: Lactoper-. *See* Lactoperoxidase
Oxidation: Bacterial, nicotinic acid, *Behrman and Stanier,* 923
Nicotinic acids, halogenated, *Behrman and Stanier,* 947
Phosphogluconate, pyruvate, in corneal epithelium, stimulation, *Kinoshita,* 247

P

Pancreas: Cholesterol esterase, purification and properties, *Hernandez and Chaikoff,* 447
Pantoate: Keto-. *See* Ketopantoate
Peptidase(s): Kidney, *Binkley, Alexander, Bell, and Lea,* 559
Leucine amino-. *See* Leucine aminopeptidase
Peptide(s): Determination, with amino acids, free, *Markovitz and Steinberg,* 285
Phosphatidyl, synthesis, *Baer, Maurukas, and Clarke,* 181
Phospho-. *See* Phosphopeptide
Poly-. *See* Polypeptide
Phenylalanine: Protein synthesis, tissue

XUM

Phenylalanine—*continued:*
culture, human cells, utilization, *Eagle, Piez, and Fleischman,* 847
Phosphatase(s): Alkaline, kidney, *Binkley, Alexander, Bell, and Lea,* 559
Glucose-6-. *See* Glucose-6-phosphatase
Pyro-. *See* Pyrophosphatase
Phosphate: 5′-, adenosine. *See* Adenosine 5′-phosphate
Creatine. *See* Creatine phosphate
Glucosamine 6-. *See* Glucosamine 6-phosphate
Uridine di-. *See* Uridine diphosphate
Phosphatidic acid(s): Dephosphorylation, enzymatic, *Smith, Weiss, and Kennedy,* 915
Phosphoglucomutase: Active site, phosphorylated, properties, *Kennedy and Koshland,* 419
Phosphogluconate: Oxidation pathway, stimulation, by pyruvate, *Kinoshita,* 247
Phosphoglyceric acid: Mutase, yeast, and muscle, kinetic properties, *Rodwell, Towne, and Grisolia,* 875
—, —, — muscle, molecular properties, *Edelhoch, Rodwell, and Grisolia,* 891
Phospholipide(s): Separation, column chromatographic, *Hanahan, Dittmer, and Warashina,* 685
Phosphomonoesterase: Prostatic, ribonuclease, free from, *Kerr and Chernigoy,* 495
Phosphopeptide(s): 89-labeled and calcium 45-labeled, vitamin D, effect, *Patrick and Bacon,* 569
Phosphoribosyl-2-methylamino-6-aminopurine: 5′-, 2,6-diaminopurine, conversion, *Remy and Smith,* 325
Phosphorus: Chloroplasts, tobacco plants, diseased, distribution, *Cooper and Loring,* 813
Phosphorylase: Nucleotide pyro-. *See* Nucleotide pyrophosphorylase
Phosphorylation: Oxidative, and potassium binding, mitochondrial, *Gamble,* 955
—, magnesium deficiency, effect, *Vitale, Nakamura, and Hegsted,* 573
Photosynthesis: *Rhodopseudomonas gelatinosa,* acetone and acetate metabolism, use, *Siegel,* 41
Pituitary: Gonadotropins, human plasma, concentration, *Antoniades, Pennell, McArthur, Ingersoll, Ulfelder, and Oncley,* 863
Posterior, purified, chromatography, ion exchange, *Light, Acher, and du Vigneaud,* 633
Plasma: Human, gonadotropins, pituitary, *Antoniades, Pennell, McArthur, Ingersoll, Ulfelder, and Oncley,* 863
Poliomyelitis: Type I (Mahoney strain), HeLa cell, phosphorus metabolism, effect, *Miroff, Cornatzer, and Fischer,* 255
Polynucleotide(s): Small, molecular weight, determination, *Al-Khalidi, Abu-Haydar, Chernigoy, and Kerr,* 487
Polypeptide(s): Long chain, and proteins, action, *Hill and Smith,* 577
Potassium: Binding, and phosphorylation, oxidative, mitochondrial, *Gamble,* 955
Propionate carbon: Lipides, adipose tissue, incorporation, *Feller and Feist,* 275
Protein(s): Polypeptides, long chain, and, action on, *Hill and Smith,* 577
Steroid, and, conjugates, serum albumin, *Erlanger, Borek, Beiser, and Lieberman,* 713
Synthesis, tissue culture, human cells, phenylalanine and tyrosine, utilization, *Eagle, Piez, and Fleischman,* 847
Viral nucleic acid, release from, *Kozloff and Lute,* 537
Purine(s): 2,6-Diamino-. *See* Diaminopurine
Inosinic acid, transformylase system, *Flaks, Warren, and Buchanan,* 215
Metabolism in bacteria, *Gots,* 57

Purine(s)—*continued:*
Synthesis, adenosine 5′-phosphate and 5 - amino - 4 - imidazolecarboxamide ribotide, by pyrophosphorylase, nucleotide, *Flaks, Erwin, and Buchanan*, 201
Pyridinecarboxylic acid(s): 3-Hydroxyanthranilate, and, metabolism, *Suhadolnik, Stevens, Decker, Henderson, and Hankes*, 973
Pyrimidine(s): Bacterial and viral, *Green and Cohen*, 601
— — —, bases and nucleosides, utilization, *Cohen, Lichtenstein, Barner, and Green*, 611
— — —, 5-hydroxymethylpyrimidines, hydrogenation, *Green, Barner, and Cohen*, 621
5-Hydroxymethyl-. *See* Hydroxymethylpyrimidine
Pyrophosphatase: Inorganic, brain, swine, *Seal and Binkley*, 193
Pyruvate: Epithelium, corneal, phosphogluconate oxidation, stimulated by, *Kinoshita*, 247

R

Racemase: Proline, from *Clostridium sticklandii*, purification and properties of, *Stadtman and Elliott*, 983
Reductase: Cytochrome, microsomal, purification and properties of, *Strittmatter and Velick*, 785
D-Proline, from *Clostridium sticklandii*, purification and properties of, *Stadtman and Elliott*, 983
Rhodopseudomonas gelatinosa: Metabolism, acetone and acetate, effect, *Siegel*, 41
Ribonuclease: Crystalline, major components, *Hakim*, 459
Ribonucleic acid: Chloroplasts, tobacco plants, diseased, distribution, *Cooper and Loring*, 813
Ribotide: 5-Amino-4-imidazolecarboxamide. *See* Amino-4-imidazolecarboxamide ribotide

S

Solvents: Mixed, enolase reaction, chemical kinetics, relation, *Westhead and Malmström*, 655
Spleen: Calf, deoxyribonuclease from, *Koerner and Sinsheimer*, 1039, 1049
Steroid: Protein, and, conjugates, serum albumin, *Erlanger, Borek, Beiser, and Lieberman*, 713
Streptococcus: Group A, uridine nucleotides, hyaluronic acid, biosynthesis, *Cifonelli and Dorfman*, 547
Strontium: 89-labeled, bone, vitamin D, effect, *Patrick and Bacon*, 569
Succinate: Enzyme, cleaving, *Seaman*, 149
Succinic dehydrogenase: Fumaric reductase, activity, *Massey and Singer*, 263
Sulfhydryl compound(s): Diphosphopyridine nucleotide, addition, *van Eys and Kaplan*, 305
Ovalbumin, thermally denatured, relation, *Cunningham, Nuenke, and Strayhorn*, 835
Titratable, hemoglobins, normal and sickle cell, at 0° and 38°, *Murayama*, 231
Sulfite: Oxidation, xanthine, *Fridovich and Handler*, 67

T

Taurine: Urine, determination, *Pentz, Davenport, Glover, and Smith*, 433
Testosterone: Serum albumin conjugates with, characterization, *Erlanger, Borek, Beiser, and Lieberman*, 713
Tetrahydrofolic acid: Folic and dihydrofolic acids, reduction to, *Futterman*, 1031
Formamidinoglutaric acid, formimino transfer, *Miller and Waelsch*, 397
Theobromine: Metabolism, in man, *Cornish and Christman*, 315
Theophylline: Metabolism, in man, *Cornish and Christman*, 315
Thiol ester: Bacteriophage tail, rupture, viral invasion, *Kozloff, Lute, and Henderson*, 511

XUM

Thymus: Deoxyribonuclease II, specificity, study, *Laurila and Laskowski*, 49
Thyroid: Hormone, tyrosine oxidation, liver, interaction, *Litwack*, 823
Tissue: Culture, cells, human, phenylalanine and tyrosine, utilization, *Eagle, Piez, and Fleischman*, 847
Tobacco: Plants, Turkish, diseased, chloroplasts, ribonucleic acid and phosphorus distribution, *Cooper and Loring*, 813
Triphosphopyridine nucleotide: Deiodinase, monoiodotyrosine, requirement for, *Stanbury*, 801
Trypsin: Susceptibility, ovalbumin, thermally denatured, relation, *Cunningham, Nuenke, and Strayhorn*, 835
Trypsinogen: Chymo-. *See* Chymotrypsinogen
Tryptophan: Metabolism, intermediary, in tissue, *de Castro, Brown, and Price*, 777
Tyrosine: Liver, oxidation, hormone, thyroid, interaction, *Litwack*, 823
Monoiodo-. *See* Monoiodotyrosine
Protein synthesis, tissue culture, human cells, utilization, *Eagle, Piez, and Fleischman*, 847

U

Uridine diphosphate: *N*-Acetylglucosamine, isolation, from seedlings, mung bean, *Solms and Hassid*, 357
Glucuronic acid, isolation, from seedlings, mung bean, *Solms and Hassid*, 357
Uridine nucleotide(s): Group A *Streptococcus*, hyaluronic acid, biosynthesis, *Cifonelli and Dorfman*, 547
Urine: Taurine, determination, *Pentz, Davenport, Glover, and Smith*, 433
Urocanic acid: Formamidinoglutaric acid, *Miller and Waelsch*, 365

V

Vinyltestosterone: 11-Oxygenated, *Marshall, Ralls, Saunders, and Riegel*, 339
Virus: Invasion, nucleic acid, release, from protein, *Kozloff and Lute*, 537
—, thiol ester bonds, rupture, in tail bacteriophage, *Kozloff, Lute, and Henderson*, 511
—, zinc, bacteriophage, role, *Kozloff and Lute*, 529
Pyrimidine, dihydrocytosine, derivatives, *Green and Cohen*, 601
Type I, poliomyelitis, HeLa cell, metabolism, phosphorus, effect, *Miroff, Cornatzer, and Fischer*, 255
Virus: *See* Bacteria
Vitamin D: Bone, 45-labeled calcium, and 89-labeled strontium, as chlorides and phosphopeptides, effect, *Patrick and Bacon*, 569
Oxidation, by mitochondria, kidney, *De Luca, Gran, Steenbock, and Reiser*, 469

W

Water: Hydrolysis, enzymatic, role of water in, *Koshland and Herr*, 1021

X

Xanthine oxidase: Sulfite, *Fridovich and Handler*, 67

Y

Yeast: Mutase, phosphoglyceric acid, kinetic properties, *Rodwell, Towne, and Grisolia*, 875
—, — —, molecular properties, *Edelhoch, Rodwell, and Grisolia*, 891

Z

Zinc: Role, in bacteriophage invasion, *Kozloff and Lute*, 529